99-21

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

TO		INIT	DATE
	DM		
	ADM		
	DSR		
	EA		
	ADMIN		
	P&D		
	LM & RR		
	MEDIA		
	RETURN TO CENTRAL FILES		

March 20, 2002

In Reply, refer to:

Memorandum:

To: District Manager, California Desert District, Bureau of Land Management, Riverside, California

From: Acting Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California

Subject: Biological Opinion on the Cadiz Ground Water Storage and Dry-Year Supply Program, San Bernardino County, California (1-8-00-F-22)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion for the proposed Cadiz Ground Water Storage and Dry-Year Supply Program and associated Groundwater Monitoring and Management Plan, located in San Bernardino County, California, and its effects on the federally threatened desert tortoise (*Gopherus agassizii*) and its critical habitat. This biological opinion has been prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act). Your December 9, 1999, request for formal consultation was received on December 13, 1999; your July 16, 2001, addendum to this request was received on July 19, 2001.

This biological opinion is based on information which accompanied your December 9, 1999, request for consultation, including the biological assessment (P&D Environmental Services 1999), the draft environmental impact statement/draft environmental impact report (DEIS/DEIR) for the proposed action, (Bureau of Land Management [Bureau] and Metropolitan Water District of Southern California [Metropolitan] 1999a); the biological resources section of the environmental planning technical report (Bureau and Metropolitan 1999b); the July 16, 2001 addendum (Metropolitan 2001); a field investigation; telephone conversations with Kathleen Kunysz, a principal environmental specialist with Metropolitan; and other sources of information in our files. A complete administrative record of this consultation is on file at the Ventura Fish and Wildlife Office.

District Manager (1-8-00-F-22)

CONSULTATION HISTORY

Throughout the latter part of 1999, the Service participated in several coordination meetings between the Bureau, the California Department of Fish and Game Department, and Metropolitan and its consultants. These meetings typically addressed the development of the environmental documents and the biological assessment. The effects of the proposed project on the desert tortoise and its habitat were the only issues raised by the Service at this time.
Upon release of the DEIS/DEIR by the Bureau and Metropolitan, and after initiation of formal consultation under section 7 of the Act, the Service raised the issue of the growth-inducing effects of new water entering southern California. Concurrently, other issues concerning the validity of the hydrologic reports were raised, and the Bureau and Metropolitan decided to prepare a supplement to the DEIS/DEIR. The Service also questioned whether the growth-inducing effects of Colorado River water purchased by the City of San Diego from the Imperial Irrigation District for importation into southern California should be considered in the consultation. For this reason, the Service deferred any decision on the growth-inducing effects of the Cadiz project until those issues regarding the Imperial Irrigation District water were resolved by the Department of the Interior. To avoid any delay in the development of the environmental documents for the Cadiz project, the Service and Bureau agreed that, upon the Department of the Interior developing a policy for how to address additional Colorado River water entering southern California, either the environmental documents would be revised to incorporate the new policy, or if the Record of Decision has been signed, to review the environmental documents to determine whether the policy constitutes new information necessitating a reinitiation of consultation under section 7 of the Act.

Because of concerns raised during the public comment period for the DEIS/DEIR surrounding hydrological data and management assumptions by Metropolitan, the Bureau contacted the Water Resources Division of the U.S. Geological Survey for additional scientific input on potential hydrological effects that could occur from implementation of the proposed action. An "early warning" system that would include a network of monitoring wells and data collection facilities, including air monitoring stations, was proposed by Metropolitan to address these concerns. The supplemental environmental impact statement/environmental impact report (Bureau and Metropolitan 2001) addresses the proposed early warning system in addition to the hydrological issues raised during the public comment period.

The subsequent July 16, 2001, addendum (Metropolitan 2001) to the December 9, 1999, request to initiate formal consultation, includes lands and designated desert tortoise critical habitat, some if which are located on lands administered by the National Park Service, Mojave National Preserve. The Bureau agreed to consult on the affects of implementation of the groundwater monitoring and management plan on behalf of the National Park Service.

District Manager (1-8-00-F-22)

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Groundwater Storage and Dry-Year Supply Program

Metropolitan has proposed to implement a groundwater storage and dry-year supply project to enhance water resource management of it's water supplies. Metropolitan provides supplemental water to its member agencies in San Diego, Orange, Riverside, San Bernardino, Los Angeles, and Ventura counties. The proposed project is one of several water management, conservation, and recycling strategies designed to provide water in a cost-efficient manner to a customer base of over 16 million people.

The Cadiz project, in conjunction with best management practices for other aspects of Metropolitan's programs, would function by storing surplus Colorado River water available in surplus (hereinafter referred to as "wet") years in the groundwater basin underlying the Cadiz Valley for later use in non-surplus (hereinafter referred to as "dry") years. The stored water could then be pumped and conveyed via the Colorado River Aqueduct (CRA) to Metropolitan's service area as needed in dry years. Metropolitan determined that the project's capacity needed to be approximately 150,000 acre-feet of recharge or extraction capacity per year; up to 1.0 million acre-feet of water storage capacity; and water transfers of indigenous water over the 50-year project life, as allowed under the groundwater monitoring and management plan.

The Cadiz Pumping Plant, an underground conveyance pipeline, a power distribution system, several spreading basins, and a wellfield would be the primary components of the Cadiz project. Metropolitan proposes to construct a pumping plant adjacent to the existing Iron Mountain Pumping Plant, which is located along the CRA. Water withdrawn from the CRA during wet years would be conveyed via the pipeline to the spreading basins in the Cadiz Valley, approximately 35 miles northwest of the Iron Mountain Pumping Plant. An electrical distribution system would be needed to power the wellfield operations, which will necessitate the construction of a powerline from the Iron Mountain Pumping Plant. The powerline would follow the pipeline alignment to the wellfield. Water would be discharged into the spreading basins to percolate into the groundwater basin. A wellfield would be constructed near the spreading basins to extract the stored water and limited quantities of indigenous groundwater during dry years. The same conveyance pipeline would be used to deliver the pumped groundwater back to the CRA.

The federal actions include issuance of temporary and permanent right-of-way grants and permits for the construction and operation of the project pipeline power distribution facilities, groundwater monitoring and management plan facilities, and amendment of the California Desert Conservation Area Plan. All other project facilities are located on properties owned by either Metropolitan or Cadiz, Incorporated. The Bureau is considering the granting of a 200-foot

wide right-of-way for the construction period to implement the project. The project facilities would be contained in a permanent 80-foot-wide right-of-way, which would allow for a 20-foot-wide permanent access road for operation and maintenance.

Within the 200-foot-wide construction right-of-way, clearing and grubbing of vegetation and removal of topsoil for stockpiling would be limited to an approximately 50-foot-wide strip that would include the area required for the pipeline trench and the permanent access road. Vegetation and topsoil on the remaining 150-foot-wide width of the easement would be incidentally crushed in place by equipment; the same procedure would be used within construction staging areas. Clearing and grubbing would occur at the Cadiz Pumping Plant site, at the spreading basins, and within the trenches and access roads for the wellfield. Night lighting for safety would be used for all project components as construction could occur around the clock.

Metropolitan's workers would inspect the conveyance pipeline, wellfield pipelines, adjacent power lines, and groundwater monitoring facilities and travel along roads where the pipeline would be constructed. Unauthorized access to the maintenance roads would be controlled by the installation of gates and signs, boulders or other topographic measures.

Approximately every five years, the conveyance pipeline would be de-watered to facilitate internal inspection of the pipeline. The pipeline would first be drained to the Iron Mountain facility and to the spreading basins, to the extent possible. Water remaining in the pipeline would be drained using eight blowoff valves that would discharge to adjacent desert habitat at low points in the pipeline right-of-way at a rate of approximately one cubic foot per second. The blowoffs would, on average, discharge approximately 18 acre-feet of water over a 9-day period. The blowoff valve located south of the spreading basins in the vicinity of Schulyler Wash would discharge approximately 54 acre-feet of water over a 27-day period, while other blowoffs would discharge less than 9 acre-feet of water.

Prior to the initial operation of the blowoff valves, all areas where the discharge could harm tortoises and an adjacent buffer zone would be surveyed for desert tortoises by an authorized biologist. The initial operation of the blowoffs will be monitored to evaluate the possible effects on the desert tortoise and its habitat. Any desert tortoises potentially subject to harm during this initial operation of the blowoffs will be relocated by the authorized biologist. Metropolitan will submit a report to Bureau, the Service, and the Department and initiate coordination with these agencies to determine the appropriate level and focus of survey and monitoring, if any, required for subsequent operation of each of the blowoff valves.

The spreading basins would be periodically inundated as a result of water being transported from the CRA. The spreading basin will be fenced to reduce the potential for desert tortoises to access the interior portion (area subject to inundation) of the basins. During periods when the spreading basins are dry, maintenance activities may include regrading the bottom of the basins

and recontouring the berms. Excess sediment would be disposed of in the adjacent agricultural area or other approved location.

The wellfield would be operated when water is withdrawn from the aquifer and transported back to the CRA. Additionally, the wellfield (well heads, power distribution system and instrumentation, and control system) would be periodically maintained to ensure that all wells are in proper working order. To minimize loss of habitat caused by repairs or modifications to wellfield pipelines, topsoil would be set aside at the initiation of repairs. At the conclusion of repairs, the topsoil would be re-spread such that the ground would be recontoured to resemble prior conditions.

Repairs and necessary minor modifications of the conveyance pipeline or appurtenant facilities are expected. To the extent that portions of the pipeline would need to be uncovered, the activity would be treated as a construction activity and conservation measures identified to address construction activity would be applied to minimize potential effects to the desert tortoise and its habitat.

Emergency repairs may be required in the event that a rupture or other catastrophic event occurs. The repairs would be restricted to the permanent right-of-way and the area would be regraded to approximate prior conditions after the repairs are in place. A biological monitor would be on site as soon as practicable to monitor for desert tortoises.

Groundwater Monitoring and Management Plan

Metropolitan would implement a groundwater monitoring and management plan to ensure that no adverse impacts occur to the nearby aquifer system, springs within affected watersheds, brine resources on Bristol and Cadiz Dry Lakes, and air quality in the surrounding Mojave Desert region from dust originating at Bristol and Cadiz Dry Lakes. The groundwater monitoring and management plan would establish a network of monitoring and data collection "features" (permanent facilities, or activities conducted without facilities). The features would be located in a region of approximately 2,000 square mile, from the New York Mountains in the Mojave National Preserve south to the vicinity of Cadiz, Bristol and Cadiz Dry Lakes, and south of Bristol Dry Lake.

Twenty-four different types of monitoring features have been identified as potentially being needed to implement the groundwater monitoring and management plan. Many of the monitoring features already exist although some may need modifications or refurbishing. (Attachment 1 [Metropolitan 2001] provides details of each of the initial 24 monitoring features). Cumulatively, up to 25 acres of desert tortoise habitat could be disturbed by currently planned and potential future features used to implement the groundwater monitoring and management plan. Installation of the initial 24 monitoring features would disturb approximately 11 acres of desert tortoise habitat, not including cross-country vehicle travel or pack animal. As data is

collected through the monitoring facilities and project activities, it may become necessary to modify the original 24 features, or to install additional similar features at other locations throughout the monitored region. Potential added features could impact up to an additional 14 acres, not including cross-country vehicle travel.

Metropolitan would submit a notification form (Attachment 2) (Metropolitan 2001) to the Bureau's Needles Field Office, the Department, and the National Park Service (if the monitoring feature would occur on the Mojave National Preserve) prior to modification of the original monitoring features, or installation of additional features, that would increase the disturbance footprint of a monitoring feature in desert tortoise habitat or add to the 11 acres of desert tortoise habitat disturbance. The Bureau would review the notification form to determine whether the proposed additional or modified features are within the scope of this biological opinion. If the Bureau determines that the proposed features are within the scope of the biological opinion, it would forward its determination and a list of biological opinion terms and conditions that would apply to the proposed features to the Services' Ventura Fish and Wildlife Office for a 30-day review; the determination would also be forwarded to the National Park Service if the proposed features are located on the Mojave National Preserve. A copy would be forwarded to Metropolitan. The Bureau would issue its authorization upon closure of the 30-day review period unless the Service or National Park Service does not concur with its determination. If the Bureau determines that a proposed feature modification or new feature is not within the scope of the biological opinion, it will reinitiate consultation with the Service and Metropolitan would contact the Department.

A completion form (Attachment 3) (Metropolitan 2001) would be prepared by Metropolitan and submitted to the Bureau, the Department, and the National Park Service (as appropriate) upon completion of each feature activity determined to be within the scope of the biological opinion. By January 31 (Kunysz, pers. comm. 2001) of each year of the life of the project, Metropolitan would submit to the Bureau, Service, the Department, and the National Park Service an annual summary of notification and completion filings during the previous year; the summary report would include copies of the actual notification and completion forms submitted by Metropolitan during the year.

Conservation Measures

Metropolitan, with guidance from the Bureau, has proposed to undertake the following actions to reduce or avoid adverse effects to the desert tortoise from construction activities of the project conveyance pipeline, well field, and spreading basins, and the implementation of the groundwater monitoring and management plan. These conservation measures are taken directly from the original and addendum biological assessments, and are minimally edited. In the following measures, a "Qualified Biologist" is defined as a trained wildlife biologist who is knowledgeable concerning desert tortoise biology, tortoise migration techniques, tortoise habitat requirements, identification of tortoise sign, and procedures for surveying for tortoises. Evidence

of such knowledge may include successful employment as a field biologist working with the desert tortoise and successfully completing the Desert Tortoise Council's annual desert tortoise workshop. The qualified biologist must have successfully demonstrated proficiency at monitoring under the direct supervision of an approved monitor.

An "Authorized Biologist" is defined as a qualified wildlife biologist who has been authorized by the Service and the Department to handle desert tortoises. Authorization for handling desert tortoises is granted to specific individuals under the auspices of the biological opinion resulting from consultation between the Bureau and the Service pursuant to section 7 of the Endangered Species Act and by the Department's endangered species permit. Requests for authorization shall be submitted to the Service's Barstow Office and the Department at least 30 days prior to anticipated work; requests shall be accompanied by a resume and supporting material for each person for whom authorization is requested.

During construction:

1. Metropolitan will designate a field contact representative (FCR) who will oversee compliance with the terms and conditions of this biological opinion during construction and for coordinating compliance with the Bureau. The FCR will be on-site during all project activities that occur within desert tortoise habitat. The FCR will have the authority to stop all project activities that violate the terms and conditions. The FCR will have a copy of the biological opinion when work is being conducted on the site.

2. All construction employees who work on the project will participate in a Metropolitan-sponsored desert tortoise education program. Metropolitan is responsible for ensuring that this education program is developed and presented prior to construction activities. New employees will receive formal training prior to working on the project. This employee desert tortoise education program will be approved by the Bureau prior to its presentation. The program may consist of a class by an approved biologist or a video. The program will cover the following topics, at a minimum: distribution of the desert tortoise, general behavior and ecology of the desert tortoise, sensitivity of the desert tortoise to human activities, legal protection for the desert tortoise, penalties for violation of state or federal laws related to protected species, reporting requirements, and project-specific minimization measures.

3. During construction, only biologists authorized by the Service will handle desert tortoises.

4. During project construction, the area of disturbance will be confined to the smallest practical area. Work area boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicles. Special habitat features, identified by an approved biologist, shall be avoided to the extent possible. Previously

disturbed areas within the project site will be used to the extent possible to stockpile materials, storage of equipment, office trailers, or to park vehicles.

A qualified biologist shall be present during construction activities on all portions of the pipeline corridor and wellfield. The qualified biologist shall monitor compliance with protection measures, assist work crews in compliance, install fencing as required and monitor fence integrity, and perform surveys prior to construction activities. In general, all project activities that could kill or disturb tortoises in any manner shall be assigned a qualified biologist who is performing the duties listed above.

Temporary tortoise fencing shall be installed around each drilling activity in the wellfield. The fencing may be above ground, but laid on the ground surface to prevent tortoise entry. A gate that prevents tortoise entry shall be included. After installation, the fence shall be inspected and approved by the qualified biologist who will search the area for tortoises. Any tortoises within the fenced area must be removed by an authorized biologist. (Note: It may take up to 30 days of 24-hour drilling to drill some wells.)

5. Except when absolutely required for the project, employees must use established or proposed roads. Established roads are those that are graded, bladed, or consist of an imbedded set or tire tracks. "Cross-country" vehicle use may be used to access monitoring feature locations for installation, operation, or maintenance of these features when the features are located at a great distance from an existing road and use of a vehicle such as a drill rig or a pump truck is needed to accomplish the task. To the extent possible, monitoring features will be located close to existing roads such that cross-country travel will be minimized. Cross-country vehicle travel will be accomplished with the assistance of a qualified biologist to avoid desert tortoises and their burrows. All other cross-country vehicle use will be prohibited.

6 Desert tortoises will only be handled by the authorized biologist and only when necessary. In handling desert tortoises, the authorized biologist will follow the techniques for handling desert tortoises contained in "Guidelines for Handling Desert Tortoises During Construction Projects" (Desert Tortoise Council 1999). The authorized biologist will maintain a record of all desert tortoises handled. This information will include for each desert tortoise: the locations (narrative and maps) and dates of observations, general condition and health (including injuries and state of healing and whether animals voided their bladders), the locations moved from and to which it was moved, diagnostic markings (identification numbers or marked lateral scutes), and photographs of each handled desert tortoise.

7. No later than 90 days after completion of construction or termination of activities, the authorized biologist will prepare a report for the Bureau, the Department, and the National Park Service (as appropriate). The report will document the effectiveness and

practicality of the minimization measures, the number of desert tortoises excavated from burrows, the number of desert tortoises moved from the site, the number of desert tortoises killed or injured, and the specific information for each handled desert tortoise as described in action # 6. The report will provide an estimate of the actual acreage (by habitat types) disturbed by various aspects of the operation.

In this report, the authorized biologist will address the initial installation of monitoring features within desert tortoise habitat, or when installation involves access by cross-country vehicle travel through desert tortoise habitat. Thereafter and throughout the life of the project, installation or modification of monitoring features or cross-country vehicle-assisted operation and maintenance will be documented using the completion form procedure.

8. Metropolitan will notify the Service, the Bureau, the Department, and the National Park Service (if, on Park Service managed lands) within three days upon injuring, killing, or finding a dead or injured desert tortoise. This will include written notification to the Ventura Fish and Wildlife Office, the Service's Division of Law Enforcement office at Torrance, and the Department's Eastern Sierra-Inland Desert Regional (ESIDR) office in Chino Hills. The written notification will include the date and time of the incident (if known), location of the carcass or injured animal, a photograph, and cause of death, if known, and other pertinent information.

   Injured desert tortoises will be transported to a qualified veterinarian for treatment at the expense of Metropolitan. If the desert tortoise recovers, the Bureau shall contact the Ventura Fish and Wildlife Office to determine final disposition of the animal.

9. During construction, vehicles will not exceed 35 miles per hour between Cadiz Road and the Iron Mountain Pumping Plant.

10. Construction workers will inspect under a vehicle for desert tortoises prior to moving the vehicle. Signs will be attached to each vehicle used in the construction or monitoring feature installation areas to remind the driver to inspect the area prior to moving the vehicle. Signs will be placed on vehicle door handles, windows, steering wheels, or other visible locations. If a desert tortoise is present under the vehicle, the authorized biologist will be notified and will move the desert tortoise away from the construction site.

11. No dogs or other domesticated animals will be allowed at construction sites in desert tortoise habitat. Pack animals used in the installation, operations, or maintenance of monitoring features will be controlled at all times and not allowed to wander within desert tortoise habitat.

12. During construction and monitoring feature installation, all trash and food items will be promptly disposed within common raven-proof and wildlife-proof containers. The containers will be removed on a regular basis to reduce attractiveness of the area to common ravens (*Corvus corax*) and other desert tortoise predators.

13. Metropolitan will mulch and stockpile vegetation grubbed from the pipeline construction right-of-way along with topsoil from those areas. Grubbing and removal of vegetation and topsoil along the pipeline alignment will be limited to the approximately 50-foot-wide swath within the construction right-of-way that is needed for pipeline trenching and the permanent access road. Vegetation will be crushed in place on other portions of the construction right-of-way. Following completion of construction of each portion of the pipeline that is a temporary disturbance, the disturbed area will be recontoured to approximate pre-project conditions and the stockpiled topsoil and mulched vegetation will be randomly spread across the re-contoured area. A sheep's foot will then be rolled across the treated area. Mulched vegetation and topsoil will be stockpiled for a maximum of three months prior to respreading.

14. A chain-link fence will be constructed around the outside of the spreading basin facility immediately after construction of the basins is completed. The depth of the fence below ground surface will be approximately twelve inches.

15. After construction is completed, Metropolitan will use barrier fences, boulders, and other topographic impediments to discourage unauthorized access into the desert from any new access created by the project.

16. Power distribution facilities will be designed such that cross members slope downward at an angle of approximately 45 degrees to minimize nesting by common ravens. Monitoring features will be designed to discourage nesting by common ravens.

17. A desert tortoise clearance survey will be conducted by a qualified biologist no earlier than 5 days prior to any ground disturbance. Should a desert tortoise be identified, no disturbance will occur in the immediate vicinity or as specified by an approved biologist until the desert tortoise is relocated. Should a burrow be identified, the burrow will need to be excavated in accordance with adopted protocol contained in "Guidelines for Handling Desert Tortoises during Construction Projects" (Desert Tortoise Council 1999).

18. Prior to filling any construction trench, the trench will be inspected by an approved biologist to ensure that no desert tortoise may have entered the trench. If a desert tortoise is found, an authorized biologist will move the tortoise to a safe location.

19. Cumulative disturbance of desert tortoise habitat caused by installation of monitoring plan features shall not exceed 25 acres, not including cross-country vehicle travel.

Metropolitan will provide the Bureau the geographic information system coordinates for surface disturbance when it occurs within a Desert Wildlife Management Area.

20. Metropolitan will provide offsite property at a 1:1 ratio for impacts to Bureau Category III desert tortoise habitat, and at a 5:1 ratio for impacts to BLM Category I, habitat (*i.e*, designated critical habitat). Compensation acreage for impacts to Category I or critical habitat would not include cross-country vehicle travel. These areas will be permanently protected and managed with emphasis for the protection and preservation of desert tortoise. Fee title to this property will be conveyed to the Bureau. The Bureau accepts funds to purchase lands in lieu of fee title. The Bureau will obtain the Department's concurrence with lands selected for acquisition.

Conservation measures applicable to operations and maintenance of the Cadiz project

21. All operations and maintenance employees who inspect, maintain, repair, or otherwise visit the project's conveyance pipeline, spreading basins, wellfield, or groundwater monitoring features within desert tortoise habitat will participate in the Metropolitan-sponsored desert tortoise education program outlined previously prior to conducting field work.

22. Operations and maintenance employees will inspect under parked vehicles for desert tortoises prior to moving vehicles. If a desert tortoise is present, the employee will wait 15 minutes for the desert tortoise to move and may move the vehicle afterward if it can be done without harming the desert tortoise. If the desert tortoise does not move within 15 minutes, the operations and maintenance employees will be authorized to pick up the desert tortoise and move it out of the way provided that they wear latex gloves to do so. Should such handling occur, Metropolitan will notify the Service, the Bureau, the Department, and the National Park Service (if on Park Service managed lands), and will indicate the date and location of the handling.

23. Upon injuring or killing a desert tortoise, or finding a dead or injured desert tortoise, Metropolitan will notify the Service, the Bureau, the Department , and the National Park Service (if on Park Service managed lands) within three days of the finding. Written notification to the Service's Ventura office, the Service's Division of Law Enforcement office at Torrance, and the Department's ESIDR office in Chino Hills will be made within three days of the finding. Information provided in writing will include the date and time of the incident (if known), location of the carcass or injured animal, a photograph, and cause of death if known.

24. Prior to the first use of blowoff valves to dewater the conveyance pipeline for routine maintenance, the area in the vicinity of each valve to be operated will be surveyed for desert tortoises by an authorized biologist. The first operation of the blowoffs will be

monitored to evaluate the effects on desert tortoises and desert tortoise habitat. The authorized biologist will remove any desert tortoises present in affected areas subject to possible harm from the operation of the blowoff valves and will promptly notify the Service, the Bureau, and the Department if any desert tortoises require relocation. Metropolitan will submit a report to the Service, the Bureau, and the Department documenting the findings from the operation of the blowoffs. This report and subsequent coordination among Metropolitan, the Service, the Bureau, and the Department will be used to determine the appropriate level and focus of survey and monitoring, if any, required for subsequent operation of each of the blowoff valves.

25. In the event of repair or modification of conveyance or wellfield pipelines that entail unearthing of substantial amounts of buried facilities, the repair or modification will be treated as a construction activity and the following measures will be implemented: 1 through 8, 10 through 13, 17, and 18.

STATUS OF THE SPECIES

The desert tortoise is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts. It also occurs in Sonora and Sinaloa, Mexico. In California, the desert tortoise occurs primarily within the creosote, shadscale, and Joshua tree series of Mojave desert scrub and the lower Colorado River subdivision of Sonoran desert scrub. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner and Brown 1982, Turner 1982, and Schamberger and Turner 1986). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, but are occasionally found in windblown sand or in rocky terrain (Luckenbach 1982). Desert tortoises occur in California from below sea level to 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982, Schamberger and Turner 1986).

Desert tortoises are most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rain storms. Desert tortoises spend most of the remainder of the year in burrows, escaping the extreme conditions of the desert. Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenbach (1982), Weinstein *et al.* (1987), and Service (1994).

The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Colorado Desert in California. On August 4, 1989, the Service published an emergency rule

listing the Mojave population of the desert tortoise as endangered (54 *Federal Register* 32326). In its final rule, dated April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 *Federal Register* 12178). The Service designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah in a final rule, published February 8, 1994 (59 *Federal Register* 5820).

The recovery plan for the desert tortoise is the basis and key strategy for recovery and delisting of the desert tortoise (Service 1994). The plan divides the range of the desert tortoise into 6 distinct recovery units and recommends the establishment of 14 Desert Wildlife Management Areas throughout the recovery units. Within each Desert Wildlife Management Area, the recovery plan recommends implementation of reserve level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of Desert Wildlife Management Areas should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, land management within all Desert Wildlife Management Areas should restrict human activities that negatively affect desert tortoises (Service 1994).

The desert tortoise was listed in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to increased predation by common ravens, collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the Service's listing of this species. During the summers of 1998 and 1999, biologists associated with the West Mojave Coordinated Management Plan surveyed over 1,200 transects over a large area of the western Mojave Desert. These transects failed to detect sign of desert tortoises in large portions of the Mojave Desert where desert tortoises were previously considered to be common. Although these data have not been fully analyzed and compared with previously existing information, they strongly suggest that the factors mentioned above have caused a widespread decline in the numbers of desert tortoises in the western Mojave Desert.

ENVIRONMENTAL BASELINE

Conveyance pipeline and spreading basins

The Cadiz project conveyance pipeline and spreading basins would be located in the eastern Mojave Desert, in San Bernardino County, beginning in the south at the Iron Mountain Pumping Plant located along the existing CRA near State Highway 62, extending northwest through the Cadiz Valley, and ending at the location of the proposed spreading basins, approximately 35 miles northwest, at the junction of the Fenner and Cadiz Valleys near U.S. Route 66.

A total of 1278.4 acres of desert tortoise habitat would be disturbed, 484.1 permanently and 794.3 temporarily disturbed. The area affected by the Cadiz project conveyance pipeline and

spreading basins includes four major plant communities: Mojave creosote bush scrub, Mojave wash scrub, desert dunes, and desert sand fields. Mojave creosote bush scrub is found throughout the project area; it is traversed intermittently by washes supporting Mojave wash scrub vegetation. Desert dunes and desert sand fields occupy the next largest portion of the project area and occur primarily in the southern half of the conveyance pipeline route. Of 484.1 acres that would be permanently disturbed, 465.4 acres would be Mojave creosote bush scrub (390 acres by installation of the spreading basins). Of the 794.3 acres temporarily disturbed, 634.1 acres would be Mojave creosote bush scrub (585.3 acres by installation of the conveyance pipeline).

Mojave creosote bush scrub, which is dominated by creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*), is characterized by widely spaced, tall shrubs, usually separated by sparsely vegetated ground. Plant species characteristic of Mojave creosote bush scrub and present on the project site include creosote bush, burro bush, chollas (*Opuntia* spp.), desert trumpet (*Eriogonum inflatum*), brittlebush (*Encelia farinosa*), spiny senna (*Senna armata*), plaintains (*Plantago* spp.), forget-me-nots (*Cryptantha* spp.), and devil's lantern (*Oenothera deltoides*).

Based on surveys conducted for Metropolitan in March and June, 1999, areas east, west and north of the Iron Mountains support few, and in some places probably no, desert tortoises, while areas to the south, support relatively more animals (P&D Environmental Services 1999). Based on these surveys, knowledge of the area from previous surveys, and 1999 field surveys, the Bureau concluded that desert tortoises likely occur throughout the action area in very low densities (Bureau and Metropolitan 1999b). The Bureau estimates the regional density of desert tortoises as approximately 0 to 20 animals per square mile (Bureau and Metropolitan 1999b). Although the habitat is ostensibly suitable and not unduly degraded, the elevations range from 500 to 1,000 feet above sea level. The area functions as a hot sink; it has relatively higher

average temperatures than other areas in the Mojave Desert (Bureau and Metropolitan 1999b). Desert tortoises typically do not occur under such conditions (Bureau and Metropolitan 1999b).

Where desert tortoises occur in very low densities, as appears to be the case in the project area, sign is sparsely distributed and difficult to find; surveyors find, at best, occasional samples of available desert tortoise sign (Bureau and Metropolitan 1999b). Desert tortoise surveys, using the Service's (1992) protocols, were performed between March 24 and March 30, 1999 (P&D Environmental Services 1999). Sign was found on the pipeline alignment in the area between Danby Lake and the Iron Mountains between about 2,000 and 3,000 feet above sea level east of the Iron Mountains (Bureau and Metropolitan 1999b). Suspect (not definitive) sign was found on the spreading basins site; the surveyors believe desert tortoises do not inhabit the spreading basin site on a permanent basis (Bureau and Metropolitan 1999b). However, the area is considered suitable but marginal desert tortoise habitat and, over the life of the project, a desert tortoise may wander through the area (Bureau and Metropolitan 1999b).

District Manager (1-8-00-F-22)

Groundwater Monitoring and Management Plan

The features used to initiate and implement the groundwater monitoring and management plan would be located in a monitored region of approximately 2,000 square mile area of the greater Mojave Desert that includes portions of the Northern Colorado and Eastern Colorado deserts; the monitored region extends from the New York Mountains in the Mojave National Preserve south to the vicinity of Cadiz, Bristol and Cadiz Dry Lakes, and south of Bristol Dry Lake. Within the monitored region are portions of the Piute-Eldorado Critical Habitat Unit (Eastern Colorado) and the Chemehuevi Critical Habitat Unit (Northern Colorado).

Project specific surveys for desert tortoise discussed in the previous section overlap into portions of the monitored region. Surveys would be conducted prior to installing monitoring feature facilities in desert tortoise habitat if not already included in previous surveys; because the locations of future features are not known at this time, a discussion of vegetative communities that could be affected is not practical. Some features would be placed in unsuitable desert tortoise habitat, such as Bristol and Cadiz Dry Lakes or at high elevations that do not provide suitable desert tortoise habitat.

EFFECTS OF THE ACTION

Conveyance pipeline, well field, and spreading basins

The Cadiz project will have both direct and indirect effects on the desert tortoise. Injury or mortality of desert tortoises could result from construction, operation, and maintenance of the pipeline, power line, wellfield, spreading basins, and related facilities. Indirect impacts such as increased predation of desert tortoises could occur during construction and maintenance.

Direct effects

Construction activities within the 200-foot right-of-way such as use of heavy equipment to open and fill the conveyance pipeline trench and install the roadway could result in the crushing of desert tortoises or their burrows; the destruction of burrows could result in the additional exposure of desert tortoises to temperature extremes or predation. To limit the potential for such mortality, Metropolitan proposes to limit clearing and grubbing of vegetation and removal of topsoil for stockpiling to a 50-foot-wide strip within the 200-foot-wide right-of-way for the conveyance pipeline and power distribution facilities and prohibit cross-country vehicle use; the 50-foot-wide strip would be confined to a permanent 80-foot-wide right-of-way which would include a 20-foot-wide strip for a roadway adjacent to the pipeline.

Desert tortoises could be killed or injured by collisions with vehicles as the conveyance pipeline is built or along existing roads as workers commute to and from staging areas. Metropolitan has

proposed measures to reduce the likelihood of vehicle collisions with desert tortoises; during construction, vehicle speed would be limited to 35 miles per hour between Cadiz Road and Iron Mountain Pumping Plant. A speed limit of 20 miles per hour has been used effectively on other construction sites in desert tortoise habitat; drivers have more time to see, and avoid, objects (including desert tortoises) in the roadway at this speed.

Desert tortoises may take shelter under parked vehicles and be crushed when the vehicles are subsequently moved. Metropolitan would require construction, operations, and maintenance personnel to inspect under vehicles for desert tortoises prior to moving the vehicles.

Desert tortoises could fall into exposed trenches. Metropolitan would require checking open trenches for desert tortoises; desert tortoises that become trapped would be removed and relocated as needed. Routinely checking for desert tortoises in open trenches should reduce the potential for injury or death.

Soil stockpiles left in place could attract desert tortoises as potential burrowing locations that could later collapse on them; desert tortoises that burrow into stock piles could also be killed when the piles are re-spread on the right-of-way.

During construction, approximately 1,278 acres of desert tortoise habitat would be disturbed; a total of 484 acres of that area would be lost permanently. The amount of linear disturbance associated with the pipeline and the areas disturbed by well construction would not be expected to include all of the habitat within the territory of any single adult or sub-adult desert tortoise; if an individual used burrows or shrubs in the construction area, it would also be familiar with habitat outside the work area. The area of permanent impact along the pipeline corridor would be 20 feet wide. Desert tortoises have been known to cross areas devoid of shrubs that are much greater than 30 feet wide. Although desert tortoises crossing such open terrain may have greater exposure to predation, the construction of the pipeline should not substantially increase fragmentation of habitat. Construction of the spreading basins will result in permanent loss of 390 acres of habitat; Metropolitan will fence the spreading basins to prevent access by the desert tortoise.

Indirect effects

The spreading basins could provide a source of water for common ravens. Although the spreading basins may not receive water for long periods of time, when they do contain water desert tortoises could be drawn, by the scent of the water, to the spreading basins. Therefore, desert tortoise predation by common ravens, especially of younger desert tortoises that have not yet developed hard shells, could increase when the spreading basins are receiving water. Surveys for desert tortoises in the area indicate that very few, if any, desert tortoises occupy this area.

District Manager (1-8-00-F-22)

Therefore, the likelihood of young desert tortoises wandering into the area to seek water is minimal.

Power poles constructed for the project could provide perching and nesting opportunities for common ravens. Metropolitan will design the power poles with downward sloping cross bars to minimize opportunity for common ravens to nest or perch.

Periodic operation of the blowoff valves to dewater the conveyance pipeline for internal inspection could result in injury or death to desert tortoises from the force of water being released, and desert tortoises could drown if they are unable to escape the flow of water. Metropolitan has proposed measures to locate and remove desert tortoises in areas affected by blowoffs prior to blowoff operation. Moving desert tortoises away from blowoff water sources should protect them from direct physical hazards presented by the water; desert tortoises drawn to the water by its scent could be subject to increased predation temporarily until the water infiltrates into the soil. Blowoff operations would provide supplemental water to approximately eight locations in the area of the Mojave Desert on an infrequent basis, and could have a beneficial effect on desert wash habitats in these areas. Erosion in the drainages affected would be temporary; as blowoffs would occur no more frequently than every 5 years, invasive species such as saltcedar (*Tamarix* spp.) would not likely become permanently established.

Uninformed workers could harass, capture, or kill desert tortoises. Although unproven at this time, unauthorized handling of desert tortoises may also be a factor in the spread of diseases to between desert tortoises. Metropolitan has proposed a worker education program to reduce the likelihood that project workers will harass or harm desert tortoises, and to prohibit the handling of desert tortoises except by authorized biologists using protocols required by the Service (Desert Tortoise Council 1999). Worker education programs have proven effective in preventing unauthorized handling and capture of desert tortoises on other construction projects; handling protocols have been established to minimize transmission of disease (such as using a new pair of sterile gloves each time that a desert tortoise is handled and using clean boxes when moving a desert tortoise).

Construction activity could attract common ravens to work sites if trash is left by workers. Common ravens prey on young desert tortoises. Metropolitan has proposed measures to reduce the attractiveness of the project area to common ravens and other desert tortoise predators through use of food containers that would prevent entry by these species.

Uncontrolled pet dogs brought to the work site could harass or kill desert tortoises. Metropolitan would prohibit workers from bringing pet dogs to the project site.

Workers who bring firearms to the work site could injure or kill desert tortoises.

District Manager (1-8-00-F-22)

Compensation

Metropolitan has proposed to provide fee title to offsite property to the Bureau to offset the loss of desert tortoise habitat at a ratio of one to one; the Bureau will require Metropolitan to acquire these lands or accept funds in lieu of accepting fee title (Foreman, pers. comm. 2001). The Bureau would obtain the Department's concurrence with lands selected for acquisition (Kunysz, pers. comm. 2001) (Nicol, pers. comm. 2001). Consequently, the Bureau should receive fee title to approximately 1278 acres of desert tortoise habitat. Transfer of lands to the Bureau should improve the overall management of the species because these lands become subject to Federal regulations. Acquired lands also are eligible for inclusion in habitat enhancement and management plans which could further improve their wildlife values. Therefore, implementation of the proposed action would include acquisition and management of compensation lands which support desert tortoises and would result in beneficial effects on this species.

Summary

In summary, the installation of the groundwater storage and dry-year supply project conveyance pipeline, well field, and spreading basins would result in disturbance of approximately 1278 acres of desert tortoise habitat; approximately 484 acres would be permanently lost. Because of the overall linear nature of this project, this loss and disturbance of habitat would be primarily in the form of a narrow strip of disturbance, except for the spreading basins. Additionally, because of the minimization measures proposed by Metropolitan, we expect that few desert tortoises will be killed or injured. Consequently, the construction, maintenance, and operation of the conveyance pipeline, well field, and spreading basins will not appreciably reduce the ability of the desert tortoise to survive and recover.

Groundwater monitoring and management plan

Implementation of the groundwater monitoring and management plan will have both direct and indirect effects on the desert tortoise. Impacts to the desert tortoise would be almost exactly the same as would occur during the construction, operation, and maintenance of the conveyance pipeline, well field, and spreading basin, but on a much smaller scale, with one notable

exception: the greatest hazard to desert tortoises associated with implementation of the monitoring plan would be presented by vehicles.

For certain monitoring features, construction of monitoring facilities would be accomplished using large drill rigs, haul trucks, and other utility vehicles to bring materials needed to construct the facilities. Desert tortoises and their burrows could be crushed by these large vehicles at the work sites. Metropolitan would have qualified biologists survey each site using Service-recommended survey protocols (Desert Tortoise Council 1999) prior to the start of ground disturbing activities; the biologists would use flagging or other markers to limit disturbance areas

and to clearly delineate work area boundaries around desert tortoise burrows. The Desert Tortoise Council's survey protocols have proven effective in locating desert tortoises and their sign; flagging and markers are an effective means to keep vehicles away from desert tortoise burrows.

Travel by monitoring feature construction vehicles to and from work sites on established roads and trails sites could result in collisions with desert tortoises. Metropolitan has proposed measures to enforce a 35 miles-per-hour speed limit on road and trails to work sites; speeds of 20 miles-per-hour or lower have proven effective in providing drivers time to react to, and avoid, desert tortoises in roadways.

Desert tortoises could be injured or killed, or their burrows crushed, by vehicles driving cross-country. Metropolitan would locate monitoring features as close as possible to existing roadways and trails; this step would reduce the amount of cross-country driving overall, and at some locations, eliminate the need for cross-country driving. Metropolitan would also have a qualified biologist accompany all cross-country travel, surveying the specific route prior to vehicle entry. Qualified biologists would be able to prevent drivers from running over desert tortoises or crushing their burrows as the vehicles proceed overland, and would also be able to mark routes that avoid desert tortoise burrows should repeat travel be needed to sites accessed by cross-country travel.

Monitoring program operations and maintenance workers who visit monitoring features would use a variety of existing roads and trails to access monitoring sites. Although some sites would not be located in suitable desert tortoise habitat, the roadways and trails they use to access the sites may traverse suitable desert tortoise habitat. Monitoring operations and maintenance vehicles could collide with desert tortoises on these routes. Metropolitan would require a 35 miles-per-hour speed limit to access monitoring feature sites in desert tortoise habitat and on roads that traverse desert tortoise habitat; speeds of 20 miles-per-hour or less have proven the most effective in preventing collisions with desert tortoises by providing drivers with more time to react to, and avoid, desert tortoises in the roadway.

Pack animals used to carry workers and their equipment to some monitoring features inaccessible by vehicle could injure or kill desert tortoises by stepping on them or crushing them in their burrows.

Adverse affects on at least 11 acres, and up to 25 acres, of desert tortoise habitat would occur from installation of monitoring feature facilities. Approximately 2 of the 11 acres are known to be in critical habitat. Metropolitan would provide 1:1 compensation for disturbance to Category III habitat, and 5:1 compensation for disturbance to critical habitat. Metropolitan has proposed to provide fee title to offsite property to the Bureau to offset the loss of desert tortoise habitat at a ratio of one to one; the Bureau will require Metropolitan to acquire these lands or accept funds in lieu of fee title. Consequently, the Bureau should receive fee title to approximately 19 acres of

habitat as the monitoring plan is initiated. Further compensation would be provided for additional monitoring feature additions, as needed, on a case-by-case basis. The Bureau would receive fee title to, or funds to purchase, these additional compensation lands; the Bureau would obtain the Department's concurrence for all lands selected for acquisition (Kunysz, pers. comm. 2001), (Foreman, pers. comm. 2001), (Nicol, pers. comm. 2001). Transfer of lands to the Bureau should improve the overall management of the species as desert tortoise habitat because these lands become subject to Federal regulations. Acquired lands also are eligible for inclusion in habitat enhancement and management plans which could further improve their wildlife values. Therefore, implementation of the proposed action would include acquisition and management of compensation lands which support desert tortoises and would result in beneficial effects on this species.

In summary, the implementation of the groundwater monitoring and management plan would result in disturbance of at least 11 acres, of which 2 acres are critical habitat; all of the disturbed acreage acres would be permanently lost as desert tortoise habitat. Because of the small size of the disturbance sites associated with implementation of the monitoring plan, the loss and disturbance of habitat would be primarily in the form of small, isolated pockets of disturbance. Additionally, because of the minimization measures proposed by Metropolitan, we expect that few desert tortoises will be killed or injured. Consequently, the proposed action will not appreciably reduce the ability of the desert tortoise to survive and recover.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Because the Bureau manages much of the land surrounding the project site, many of the actions that are reasonably expected to occur will likely be subject to the requirements of section 7. The Bureau has indicated that it is unaware of any non-federal actions in the vicinity of the pipeline route and the monitored region that, when considered with this action that would affect the desert tortoise in the action area.

CONCLUSION

After reviewing the status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the desert tortoise, or adversely modify its critical habitat.

We find that the proposed action is not likely to jeopardize the continued existence of the desert tortoise, or to adversely modify its critical habitat, because:

1. The Bureau and Metropolitan have proposed measures as part of the proposal to avoid or minimize injury or mortality to desert tortoises.

2. The area to be directly affected constitutes a small portion of the desert tortoise's range, generally provides marginal habitat for the species within the great majority of the project footprint, and directly affects only a very small portion of its critical habitat.

3. Desert tortoises are unlikely to be killed or injured in large numbers because of the low density of desert tortoises in the vicinity of the action area.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and the Bureau must make them binding conditions of any grant or permit issued to Metropolitan for the exemption in section 7(o)(2) to apply. The Bureau has a continuing duty to regulate the activity covered by this incidental take statement. If the Bureau fails to require Metropolitan to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of the incidental take, the Bureau and Metropolitan must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

The Service anticipates that few desert tortoises are likely to be injured, killed, or relocated due to construction or operation, and maintenance activities. Given the minimization measures

proposed by Metropolitan and the Bureau and the low densities of desert tortoises in the project area, the Service is unable to determine the specific number of individuals that would be injured or killed because desert tortoises are mobile, not entirely predictable in their activity patterns, and can dig new burrows in previously inspected areas over time; hatchlings and their burrows are particularly difficult to detect. For these reasons, we are unable to anticipate precisely the number of desert tortoises that may be killed or injured, within the approved construction areas or rights-of-way or during operations and maintenance of the Cadiz project.

If any desert tortoises are killed or injured, during construction, operations, or maintenance, Metropolitan, the Bureau, the Department, and the Service shall immediately review the circumstances of the incident to determine if additional protective measures are required. Construction, operation, and maintenance activities may proceed during the period of review, provided that all of the protective measures proposed by Metropolitan and the Bureau and the Service's terms and conditions have been and continue to be fully implemented.

This biological opinion provides an exemption to the prohibitions against take only for those activities occurring within the delineated boundaries of the approximately 792-acre conveyance pipeline (200-foot-wide construction right-of-way, the approximately 88 acres of the well sites, substations, well field pipelines, and roads to the well sites), the 390 acres of the spreading basins, the approximately 3-acre Cadiz pumping plant, and the approximately 10 acres of staging areas. During operations and maintenance, only those activities occurring at the Cadiz pumping plant, within the 80-foot-wide permanent conveyance pipeline and road right-of-way, at the valve blowoff locations, at the well sites (including pipelines, roads, and substations), at the spreading basins, and at monitoring plan feature sites or cross-country travel to monitoring feature sites, are exempted from the prohibition against take.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of desert tortoises. Except as noted below, the Service incorporates by reference the proposed conservation measures in the "Description of the Proposed Action" section of this biological opinion into this incidental take statement as part of the terms and conditions.

1. Well-defined operational procedures shall be implemented by Metropolitan to avoid and minimize take of desert tortoises during all project activities.

2. Desert Tortoises shall be handled only by persons who will be specifically authorized by the Service.

District Manager (1-8-00-F-22)

TERMS AND CONDITIONS

To be exempt from the prohibitions of Section 9 of the Act, the Bureau must ensure that Metropolitan complies with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

In the following terms and conditions a qualified biologist is defined as a trained wildlife biologist who is knowledgeable about the biology of desert tortoises and their habitat requirements, identification of their sign, and survey procedures for the species, who has been approved by the Service to survey for desert tortoises and to monitor construction and operation and maintenance activities. An authorized biologist is a qualified biologist who has been authorized by the Service to handle desert tortoises.

The following terms and conditions implement reasonable and prudent measure 1:

1. An authorized biologist shall inspect each stockpile of mulch or vegetation and soil grubbed from the pipeline construction right-of-way for desert tortoises or their burrows prior to the recontouring of construction areas to approximate pre-project conditions with stockpiled material. Desert tortoises found during such inspections shall be moved to a safe location by the authorized biologist prior to use of subject stockpile material for recontouring or other post-construction purposes. All stockpiled material shall be used in post-construction, removed, or otherwise smoothed back to grade. No unused stockpiles shall be left in place.

2. Firearms shall be prohibited from all construction sites with the exception of paid security and law enforcement personnel. After construction, patrol personnel may carry firearms.

3. Except for vehicle travel in the Cadiz Road, all vehicle traffic is to observe a 20 mile per hour speed limit. (This term and condition modifies applicant's measure 9.)

The following terms and conditions implement reasonable and prudent measure 2:

1. Except as provided in conservation measure 22, only biologists authorized by the Service shall handle desert tortoises, and only when necessary.

2. The Bureau shall submit to the Service requests for authorized biologist approval. Requests for authorized biologist approvals shall be submitted at least 30 days prior to the initiation of project activities.

District Manager (1-8-00-F-22)

REPORTING REQUIREMENTS

The Bureau shall ensure that a written report is submitted to the Service within 90 days of the completion of construction of the conveyance pipeline, well fields, and spreading basins and that the report includes the following information: amounts of habitat temporarily disturbed, or lost; revegetation/restoration results, numbers of desert tortoises killed, injured, or moved; and general health of desert tortoises observed and/or moved. The Bureau shall also ensure that an annual written report regarding operations and maintenance activities is provided to the Service by January 31 of each year. This report shall include: the number of desert tortoises killed, injured, or moved during the previous calendar year; and general health of desert tortoises observed and/or moved. The Bureau is encouraged to submit recommendations regarding modification of the above terms and conditions or additional measures that would improve or maintain protections for desert tortoises or other listed or proposed species while simplifying compliance with the Act.

DISPOSITION OF DEAD OR INJURED DESERT TORTOISES

Upon locating a dead or injured desert tortoise, initial notification within three working days of its finding must be made in writing to the Service's Division of Law Enforcement (370 Amapola Avenue, Suite 114, Torrance, California 90501) and by telephone and writing to the Ventura Fish and Wildlife Office (805-644-1766). The report shall include the date, time, location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. Injured animals shall be transported to a qualified veterinarian. Should any treated desert tortoises survive, the Service should be contacted regarding the final disposition of the animals.

The Bureau shall endeavor to place the remains of intact desert tortoises with educational or research institutions holding the appropriate State or Federal permits per their instructions. If such institutions are not available or the shell has been damaged, the information noted above shall be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution by the Bureau.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat to help implement recovery plans, or to develop information.

District Manager (1-8-00-F-22)

The Service offers no conservation measures at this time.

REINITIATION NOTICE

This concludes formal consultation on the Bureau's proposal to issue a right-of-way grant for the Cadiz Ground Water Storage and Dry-Year Supply Program. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions please contact Charles Sullivan of my staff at (760) 255-8845.

REFERENCES

Bureau of Land Management and Metropolitan Water District of Southern California. 1999a. Cadiz Groundwater Storage and Dry-Year Supply Program Draft Environmental Impact Report (Report No. 1157) / Draft Environmental Impact Statement. Sch. No. 99021039). Riverside and Los Angeles, California.

Bureau of Land Management and Metropolitan Water District of Southern California. 1999b. Cadiz Groundwater and Dry-Year Supply Program Environmental Planning Technical Report--Biological Resources (Report No. 1164). Riverside and Los Angeles, California.

Bureau of Land Management and Metropolitan Water District of Southern California. 2001. Cadiz Groundwater Storage and Dry-Year Supply Program Groundwater Monitoring and Management Plan Environmental Impact Report (Report No. 1174) / Environmental Impact Statement (Sch. No. 99021039). Riverside and Los Angeles, California.

Burge, B.L. 1978. Physical characteristics and patterns of utilization of cover sites by *Gopherus agassizii* in southern Nevada. Proceedings of the 1978 Symposium, The Desert Tortoise Council. pp. 80-111.

Burge, B.L., and W.G. Bradley. 1976. Population density, structure and feeding habits of the desert tortoise, *Gopherus agassizii*, in a low desert study area in southern Nevada. Proceedings of the 1976 Symposium, The Desert Tortoise Council. pp. 51-74.

Desert Tortoise Council. 1999. Guidelines for Handling Desert Tortoises during Construction Projects. E. L, LaRue, Jr., editor. San Bernardino, California.

Foreman, L. 2001. Personal communication. Supervisory Wildlife Biologist. Bureau of Land Management. Riverside, California.

Hovik, D.C., and D.B. Hardenbrook. 1989. Summer and fall activity and movements of desert tortoises in Pahrump Valley, Nevada. Abstract of paper presented at the Fourteenth Annual Meeting and Symposium of the Desert Tortoise Council.

Kunysz, K.M. 2001. Personal communication. Principal Environmental Specialist. Metropolitan Water District of Southern California. Los Angeles, California.

Luckenbach, R.A. 1982. Ecology and management of the desert tortoise (*Gopherus agassizii*) in California. In R.B. Bury (ed.). North American Tortoises: Conservation and Ecology. U.S. Fish and Wildlife Service, Wildlife Research Report 12. Washington, D.C.

Metropolitan Water District of Southern California. 2001. Addendum to the Desert Tortoise Biological Assessment Addressing the Groundwater Monitoring and Management Plan for the Cadiz Groundwater Storage and Dry-Year Supply Program. Los Angeles, California

Nicol, K. 2001. Personal communication. Wildlife Biologist. California Department of Fish and Game. San Diego, California.

P&D Environmental Services. 1999. Desert Tortoise Biological Assessment for the Cadiz Groundwater Storage and Dry-Year Supply Program. Prepared for the Metropolitan Water District of Southern California and the Bureau of Land Management. Orange, Los Angeles, and Riverside, California.

Schamberger, M., and F.B. Turner. 1986. The application of habitat modeling to the desert tortoise (*Gopherus agassizii*). Herpetologica 42(1):134-138.

Turner, R.R. 1982. Mohave desert scrub. In: D.E. Brown (editor), Biotic communities of the American Southwest - United States and Mexico. Desert Plants 4(1-4):157-168.

Turner, F.B., and D.E. Brown. 1982. Sonoran desert scrub. In: D.E. Brown (editor). Biotic communities of the American Southwest - United States and Mexico. Desert Plants 4(1-4):181-222. U.S. Fish and Wildlife Service. 1992. Field survey protocol for any Federal action that may occur within the range of the desert tortoise. Ventura, California.

U.S. Fish and Wildlife Service. 1992. Field survey protocol for any Federal action that may occur within the range of the desert tortoise. Ventura, California.

U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. Portland, Oregon.

Weinstein, M., K.H. Berry, and F.B. Turner. 1987. An analysis of habitat relationships of the desert tortoise in California. A report to the Southern California Edison Company. Rosemead, California.